A NEW POBJOY ENGINE

The Niagara Series V : Cruising Power Higher Than Maximum of Niagara III

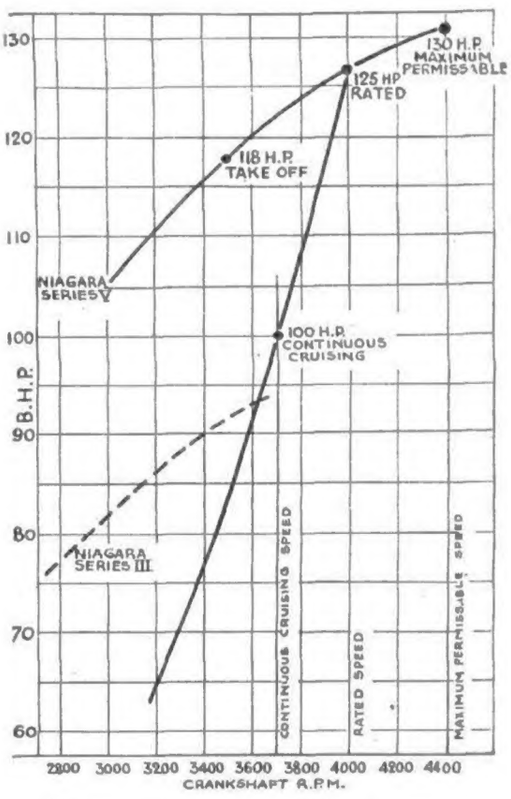
THE latest development in the Pobjoy Niagara series of light radial engines is the Niagara V which is remarkable for its increased output as compared with its immediate predecessor, the Niagara III. Although of substantially the same size and weight as the earlier engine, the continuous cruising power is rather better than the maximum output of the Niagara III. Despite this, the specific fuel consumption has been substantially reduced which means that the substitution of the Niagara V for the Niagara III in a given aircraft will enable it to cruise at its former top speed without a reduction in range.

The increased output and fuel economy may be chiefly attributed to the following: the bore has been increased from 77 mm. to 81 mm. and the cruising r.p.m. from 3,300 to 3,700; a downdraft carburettor is used and the compression ratio has been increased from 6 : 1 to 8 : 1. Higher rotational speed and the small size of cylinder used have permitted this marked increase in compression ratio although the fuel need not have an octane number of more than 80. Commercial leaded fuels may thus be used.

To cope with the increased output a number of improvements have been incorporated: the valve gear is continuously lubricated by metering and scavenge pumps; the valves and inserts are stellited; the cylinder barrels and valve stems are nitrided; and the cylinder barrels and heads have closer finning.

There is a high-pressure cold-starting oiling system which discharges an extra supply over the connecting rod assembly while the oil is still cold. A self-contained cooling system is another feature. The characteristic Niagara nose is retained but the rear support of the cowling is now built integral with the engine, forming the rear lip of the cooling duct. This latter is of venturi form at the rear and its shape permits a highly efficient exit slot being formed between it and the nacelle cowling. The inter-cylinder deflectors are of a new pattern and may be extracted without disturbing anything besides the exhaust pipes, after the removal of which individual cylinders may be taken out without interfering with the rest of the installation. Other minor refinements are an improved form of tooth for the main reduction gears, stiffer oil joint faces on the cylinder heads, an improved type of oil pressure relief valve and a new pattern of large-capacity crankcase breather.

The brief specification of the Niagara V engine is as follows:—Bore 81 mm., stroke 87 mm., capacity 3,130 c.c., rated power and speed 125 h.p. at 4,000 r.p.m., maximum power and speed 130 h.p. at 4,400 r.p.m., continuous cruising power and speed 100 h.p. at 3,700 r.p.m., cruising consumption .48 pt. per b.h.p. hour, reduction gear ratio .468 : 1, weight (including airscrew hub, exhaust pipes, nose piece, airducts, and cowling supports, but less electric starter and generator) 175 lb., weight of electric starter 10 lb., weight of 150-watt generator 9lb.



Performance curves of the Niagara V.

EGYPT INVESTIGATES

ON Wednesday of last week H.E. Afifi Pasha, the Egyptian Ambassador, paid a visit to Brooklands aerodrome to inspect the latest products of the Hawker Aircraft Company, and, in addition, the Miles Magister, which was flown over from Reading by Wing Cdr. Stent and Mr. Skinner.

The Ambassador was accompanied by Group Capt. Tait Bey (Air Adviser to the Egyptian Government), Capt. Razik, who has stayed a while at Halton watching our methods of training, which he intends adopting at the new school at Almaza Aerodrome, Cairo, and Capt. Nagi, who had just returned from a course of instruction at the Electrical and Wireless School at Cranwell.

Flt. Lt. Philip Lucas took off the Hawker P.4 light bomber, obviously in trim for full-load trials, despite which fact he gave the mission a very convincing display of the machine's capabilities. This was followed by a very finished performance by Mr. Skinner on the Miles Magister.

After luncheon at the St. George's Hill Golf Club—surely one of the most charmingly situated club houses in the country—the party proceeded to inspect the Hawker works at Kingston-on-Thames.

The Egyptian Air Force is, like many others, undergoing considerable expansion, and it is probable that the major portion of the flying material will be purchased in this country.

Forthcoming Events

June 15-20. Magyar Pilota Picnic, Hungary.
June 20. R.Ae.C. of Belgium: Gordon Bennett Balloon Race, Brussels.
June 21-28. Federation Aeronautique Internationale: London Conference.
June 26. Royal Air Force Display, Hendon.
June 28 and 29. S.B.A.C. Display, Hatfield.
July 1. Aero Golfing Society: *Flight* Trophy.
July 3. Newcastle-on-Tyne Aero Club: Newcastle Trophy Race.
July 3. Ramsgate Airport, Official Opening.
July 4-18. Aero Club of Germany: Wasserkuppe Gliding Meeting.
July 10. Cardiff Aeroplane Club: London-Cardiff Race.
July 11. Herts and Essex Aeroplane Club: Air Display, Broxbourne.
July 11. Italian Aero Club: Circuit of Rome.
July 15. Aero Golfing Society: Jubilee Cup.
July 17. Portsmouth Aero Club: Garden Party.
July 17-18. Deauville Rally.
July 23-August 1. Swiss International Meeting.
July 24. Devon Air Day and Race: Plymouth and Exeter.
July 30-August 15. "Avia" Aero Exhibition, the Hague.
July 31. Cinque Ports Flying Club: Folkestone Aero Trophy Race.
July 31-August 2. Yorkshire Gliding Club: Opening Meeting Sutton Bank.
August 1-14. Yorkshire Gliding Club: Instructional Camp, Sutton Bank.
August 3-September 7. Public Schools Aviation Camp, Norwich.
August 6-7. Austrian Aero Club: International Rally, Lake Worth.
August 14. Eastbourne Flying Club: At Home.
August 14-22. Yorkshire Gliding Club: Open Contest, Sutton Bank.
August 21. Thanet Aero Club: Aviation Meeting and Race.
August 21. Midland Aero Club: "At Home."
August 22-29. Italian Aero Club: Circuit of Littorio.
August 28 and 29. Cinque Ports Flying Club: Lympne International Rally and Wakefield Trophy Race.
August 28-September 25. B.G.A. National Soaring Competition, Great Hucklow.
September 4 and 5. Southend Flying Club: "At Home."
September 10-11. R.Ae.C.: King's Cup Race.
September 12. Aero Club de France: Coupe Deutsch de la Meurthe, Etampes.
September 23. Aero Golfing Society: Cellon Trophy.